

## CLAIMS

### What is claimed is:

1. A preconnected disposable for an apheresis system for separating blood into at least one component for collection, said disposable comprising

5 a blood removal/return assembly for removing blood and returning any uncollected components to the donor;

a cassette assembly interconnected to said blood removal/return assembly, said cassette assembly comprises integral fluid passageways for the passage of blood and blood components;

10 a blood processing vessel interconnected to said cassette assembly for separating blood received from the donor into components; and

a red blood cell collection assembly comprising

15 a red blood cell collection bag interconnected to said cassette assembly for receiving separated red blood cells when red blood cells are the component to be collected;

a leukoreduction filter interconnected to said red blood cell collection bag;

and

a red blood cell storage bag interconnected to said leukoreduction filter.

2. The preconnected disposable of claim 1 further comprising

20 an air removal bag interconnected to said red blood cell storage bag for receiving air from said red blood cell storage bag.

3. The preconnected disposable of claim 1 further comprising

first tubing interconnected between said leukoreduction filter and said red blood cell collection bag; and

25 a frangible connector in said first tubing for allowing said first tubing to be opened for the passage of red blood cells through said first tubing.

4. The preconnected disposable of claim 3 further comprising a second tubing interconnected to said red blood cell collection bag, said second tubing being selectively connectable to a storage solution container; and

a frangible connector in said second tubing for allowing said second tubing to be opened for the passage of storage solution therethrough.

5. The preconnected disposable of claim 1 comprising a platelet collection bag interconnected to said cassette assembly for receiving separated platelets when platelets are to be collected.

6. The preconnected disposable of claim 1 comprising a plasma collection bag interconnected to said cassette assembly when plasma is to be collected.

7. A method for collecting leukoreduced red blood cells comprising:  
removing whole blood containing red blood cells from a donor;  
separating red blood cells from other blood components using a centrifugal apheresis system whereby said centrifugal apheresis system includes a preconnected disposable system having a centrifuge vessel and a red blood cell collection assembly preconnected thereto via tubing;  
collecting the separated red blood cells in said red blood cell collection assembly; whereby said red blood cell collection assembly includes a leukoreduction filter and a red blood cell storage reservoir; and  
passing said separated red blood cells from said centrifuge vessel through said leukoreduction filter to said cell storage reservoir.

8. A method according to claim 7 in which said red blood cell collection assembly further comprises a red blood cell collection reservoir which is interposed between said centrifuge vessel and said leukoreduction filter; the method further comprising

collecting in the blood cell collection reservoir the separated red blood cells from said centrifuge vessel prior to said step of passing the separated red blood cells through said leukoreduction filter.

9. A method according to claim 7 in which said red blood cell collection  
5 assembly further comprises a sterile barrier/spike assembly for connection of said red blood cell collection assembly to a source of storage solution; said sterile barrier/spike assembly being interposed between said centrifuge vessel and said leukoreduction filter; the method further comprising

connecting said sterile barrier/spike assembly to a source of storage solution; and  
10 adding a storage solution to the separated red blood cells prior to said step of passing said separated red blood cells through said leukoreduction filter.

10. A method according to claim 8 in which said red blood cell collection  
assembly further comprises a sterile barrier/spike assembly for connection of said red blood cell collection assembly to a source of storage solution; said sterile barrier/spike  
15 assembly being interposed between said centrifuge vessel and said leukoreduction filter; the method further comprising

connecting said sterile barrier/spike assembly to a source of storage solution; and  
adding a storage solution to the separated red blood cells prior to said step of  
passing said separated red blood cells through said leukoreduction filter.

20 11. A method according to claim 8 in which said red blood cell collection reservoir is connected to said leukoreduction filter by a frangible connector; whereby said frangible connector blocks fluid flow therethrough; the method further comprising selectively opening said frangible connector to allow flow therethrough.